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IS 5207 (1969): Brushes, clothes [CHD 24: Brushware]

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Bhartṛhari—Nītiśākām

“Knowledge is such a treasure which cannot be stolen”



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IS : 5207 - 1969
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Indian Standard

SPECIFICATION FOR BRUSHES, CLOTHES

(First Reprint FEBRUARY 1983)

UDC 687.95



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INDIAN STANDARDS INSTITUITON
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARC
NEW DELHI 110002

Gr 3

November 1969

**AMENDMENT NO. 3 SEPTEMBER 2004
TO
IS 5207 : 1969 SPECIFICATION FOR
BRUSHES, CLOTHES**

(*Page 6, clause 7.1*) — Substitute 'Lindane 6.5% DP (see IS 14834 : 2000*) or methyl parathion 2% DP (see IS 8960 : 1978*)' for 'DDT dusting powder (conforming to IS : 564 - 1961*)'

(*Page 6, foot note marked **) — Substitute the following for the existing FOOTNOTE:

'*Lindane dusting powder — Specification'

(*Page 6, footnote*) — Insert the following footnote at the end:

'‡Specification for methyl parathion dusting powders'

(CHD 24)

Reprography Unit, BIS, New Delhi, India



AMENDMENT NO. 2 JULY 1983

TO

IS:5207-1969 SPECIFICATION FOR BRUSHES, CLOTHES

Addendum

(Page 7, Appendix A, last entry) - Add the following entry before the existing last entry under respective column:

'Sisoo तिक्कू *Dalbergia* *Sisoo'*

(CDC 31)

Reprography Unit, ISI, New Delhi, India

AMENDMENT NO. 1 JULY 1975
TO
IS : 5207 - 1969 SPECIFICATION FOR
BRUSHES, CLOTHES

Alteration

(Page 3, clause 4.1.2.3) — Substitute the following for the existing clause:

'4.1.2.3 The timber shall be reasonably straight-grained and well-seasoned to a moisture content not exceeding 15 percent when tested by the electronic moisture meter method. In case of dispute, the oven-dry method shall be used (*see Appendix C*).'

Addendum

(Page 9, clause B-3.4.1) — Add the following new appendix after **B-3.4.1**:

APPENDIX C
(Clause 4.1.2.3)

DETERMINATION OF MOISTURE CONTENT OF TIMBER

C-1. TEST SPECIMEN

C-1.1 The entire block used in brushes, clothes, may form the test specimen for the determination of moisture content, or a coupon cut from the test specimen may, as well, be used for moisture content determination. When for any reason additional determination of moisture content is required, separate samples shall be prepared from the sample material as is used in preparing the test specimens. Smaller specimens may be used when deemed necessary. The test shall be carried out immediately after cutting the specimen.

C-2. PROCEDURE

C-2.1 Weigh accurately each test specimen. This specimen shall then be dried in a ventilated oven at a temperature of $105 \pm 2^{\circ}\text{C}$ until the weight becomes constant between two successive weighings made at an interval of not less than one hour.

C-3. CALCULATION

C-3.1 Moisture content, expressed as a percentage of the oven-dry mass = $100 \times \frac{W_1 - W_0}{W_0}$

where

W_1 = initial mass in g of the test specimen, and
 W_0 = oven-dry mass in g of the test specimen.

(CDC 31)

Indian Standard

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NEW DELHI 110002

Indian Standard

SPECIFICATION FOR BRUSHES, CLOTHES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 10 June 1969, after the draft finalized by the Brushware Sectional Committee had been approved by the Chemical Division Council.

0.2 The use of brushes for removing dust from clothes is on increase with the increase in the use of woollen and synthetic-fibre clothes. For the proper cleaning of these clothes without damaging the fibres, it is essential that these are brushed with brushes specially meant for the purpose. Very hard brushes will damage the fibres while the very soft brushes will not be able to do the required cleaning. The above considerations led the Sectional Committee to formulate an Indian Standard for these types of brushes. Considerable help has been taken from the specification IND/GS/955:1959 'Brushes, clothes' issued by the Ministry of Defence, Government of India.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for clothes brushes manufactured from nylon monofilaments or bristles.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in 2 of IS: 384-1964† shall apply.

3. TYPES AND SIZES

3.1 Types — Depending on the filling material used, clothes brushes shall be of following two types:

<i>Type</i>	<i>Filling Material</i>
1	Nylon monofilaments
2	Bristles

*Rules for rounding off numerical values (*revised*).

†Specification for brushes, paints and varnishes, flat (*second revision*).

3.2 Sizes — Clothes brushes shall be of two sizes, namely

- a) 150-mm size, and
- b) 215-mm size.

4. REQUIREMENTS

4.1 Materials

4.1.1 Filling Material — It shall be either nylon monofilaments of Type 6, 66 or 610, of diameter 0.25 to 0.30 mm (conforming to IS : 1843-1963*) or of natural colour, general quality, stiff/semi-stiff (SS) type of bristles (conforming to IS : 1844-1962†).

4.1.2 Handle — The handle shall be made of timber or plastic.

4.1.2.1 The plastic handle shall be of high density thermosetting or thermoplastic resin.

4.1.2.2 Any of the timber species listed in Appendix A shall be used in the manufacture of the wooden portion of the brush.

4.1.2.3 The timber shall be reasonably straight-grained and well-seasoned to a moisture content not exceeding 12 percent.

4.1.2.4 The timber shall be free from brashness, any kind of biological or non-biological deterioration, insect attack, centre-heart (pith), knots (except pin knots), cracks, wrap and any other defect which may reduce the life of the brush or affect its utility.

4.1.3 Wire — Brass wire of 0.38 ± 0.05 mm dia shall be used.

4.1.4 Staples — Staples of bright, iron wire or copper-coated, mild steel wire of 0.80 ± 0.05 mm dia shall be used.

4.1.5 Nails for Wooden Handle — Steel or iron nails, 10 mm long and 1.40 mm in diameter shall be used for securing back over the exposed portion of the board.

4.2 Manufacture

4.2.1 The shape and design of the brushes shall generally be as shown in Fig. 1 and Fig. 2.

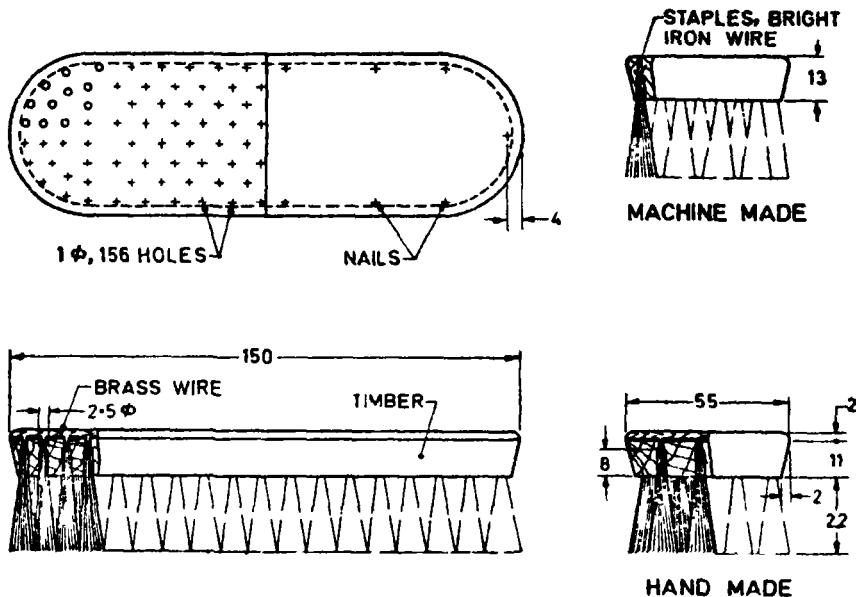
4.2.2 The back and board shall be manufactured from one piece of timber.

4.2.3 The back shall be securely glued to the board in case of wooden board and back.

*Specification for nylon monofilaments.

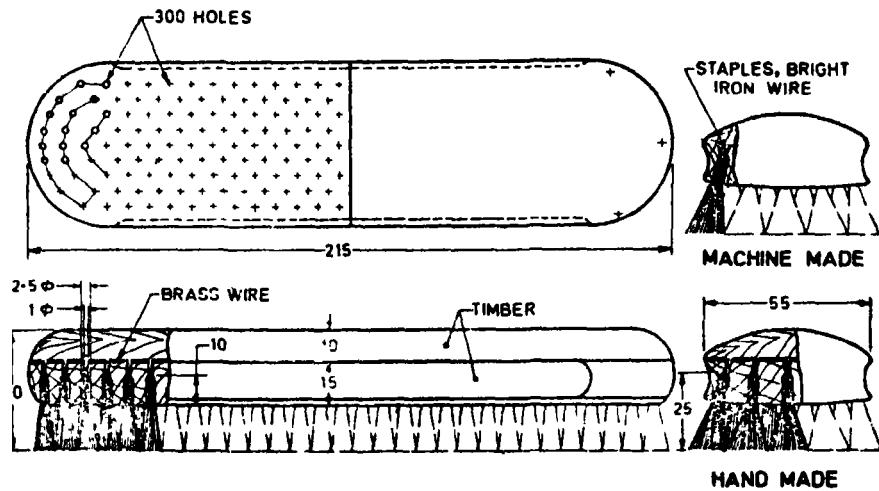
†Specification for bristles.

IS : 5207 - 1969



All dimensions in millimetres.

FIG. 1 BRUSH, CLOTHES, 150 mm SIZE



All dimensions in millimetres.

FIG. 2 BRUSH, CLOTHES, 215 mm SIZE

4.2.4 The board shall be drilled with 156 and 300 tuft holes of the shape and size as indicated in Fig. 1 and Fig. 2.

4.2.4.1 *For hand-made brushes*—The tufts of filling material shall be firmly drawn into the tuft holes by means of brass wire and thoroughly bottomed so that they cannot be subsequently knocked back. The back shall be securely glued to the board and reinforced with 6 steel or iron nails, in such a manner that they do not foul the wire or the filling material.

The filling material shall be trimmed straight-faced to give the shape as shown in Fig. 1 and Fig. 2.

4.2.4.2 *For machine-made brushes*—No back is required. The tufts of filling material shall be cross-stapled and securely set to the bottom of the tuft holes by machine, to give the shape of the brush as shown in Fig. 1 and Fig. 2.

4.3 Dimensions and Tolerances—The brushes shall conform to the dimensions given in Fig. 1 and Fig. 2.

4.3.1 The tolerance on the linear dimensions shall be as follows:

<i>Nominal Dimensions</i>	<i>Tolerance</i>
mm	\pm mm
Up to 15	0.5
Over 15 but below 40	1.0
40 and above	1.5

4.3.2 The diameter of the tuft holes shall be 2.5 ± 0.4 mm.

4.3.3 The tolerances specified in **4.3.1** and **4.3.2** shall not apply to filling material for which minimum lengths have been prescribed (see Fig. 1 and Fig. 2).

4.4 Workmanship and Finish

4.4.1 The board of the brush shall be smoothly finished. In case of wooden board, it shall be suitably waxed, polished or painted.

4.4.2 In general workmanship and finish, the brushes shall match the approved sample.

5. TESTS

5.1 Weight of Filling Material per Finished Brush—Unfasten the tufts by removal of steel wire or staples. Determine the total weight of the filling material.

5.1.1 The total weight of the filling material per brush shall be as follows:

Size mm	Weight	
	Type 1 g	Type 2 g
150	28	30
215	30	32

5.1.1.1 A tolerance of ± 5 percent shall be allowed in the weight of the filling material.

5.2 Knock Back Test— Knock the brush at the back and ascertain that the tufts have not penetrated into the holes and the working surface is not uneven.

5.3 Pull Test —The tufts shall not fail when subjected to a straight pull of thumb and finger grip.

6. MARKING

6.1 Unless otherwise agreed to between indentor or inspection authority and the supplier, each brush shall be legibly and indelibly marked or stamped with the manufacturer's name or recognized trade-mark, if any, type, size, and the year of manufacture.

6.2 The brushes may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. PRESERVATION

7.1 Bristles shall be liberally dusted with a mixture of 5 parts by weight of DDT dusting powder (conforming to IS : 564-1961*) and 95 percent by weight of French chalk (conforming to IS:380 - 967†).

8. PACKING

8.1 The clothes brushes shall be wrapped with cellulose paper so as to ensure retention of the preservative and shall further be packed in card board boxes or as agreed to between the purchaser and the supplier.

*Specification for DDT dusting powder (*revised*).

†Specification for French chalk, technical (*first revision*).

9. SAMPLING

9.1 The method of drawing representative samples of the material and the criteria of conformity shall be as prescribed in Appendix B.

APPENDIX A (Clause 4.1.2.2)

SPECIES OF TIMBER FOR MANUFACTURE OF WOODEN PORTION OF BRUSHES, CLOTHES

A-1. The list of species of timber approved for the manufacture of wooden portion of clothes brushes is given below:

TRADE NAME		BOTANICAL ORIGIN
Roman	Devanagari	
aini	ऐनी	<i>Artocarpus hirsuta</i> Lamk., fam, Moraceae
banati	बनाती	<i>Lophopetalum wightianum</i> Arn., fam. Celastraceae
bijasal	बीजसाल	<i>Pterocarpus marsupium</i> Roxb., fam. Leguminosae
champak	चम्पक	<i>Micletia champaca</i> Linn., fam. Magnoliaceae
chickrassi	चिकरासी	<i>Chukrasia tabu'aris</i> A. Juss., fam. Meliaceae
dhaman	धामन	<i>Grewia tilrifolia</i> Vahl., fam. Tiliaceae
gamari	गमारी	<i>Gmelina arborea</i> Roxb., fam. Verbenaceae
(gumhar)	(गुम्हार)	
haldū	हल्दू	<i>Adina cordifolia</i> Hook, f, fam. Rubiaceae
kaim	कैम	<i>Mitragyna parvifolia</i> (Roxb.) Korth., syn. <i>Stephegyne parvifolia</i> Korth., fam. Rubiaceae
kanju	कंजू	<i>Holoptelea integrifolia</i> Planch., fam. Ulmaceae
kathal	कटहल	<i>Artocarpus heterophyllus</i> Lamk., syn., A. <i>integrifolia</i> Linn., f. fam. Moraceae
kuthan	कूथन	<i>Hymenodictyon excelsum</i> Wall., fam. Rubiaceae

lambapatti	लम्बापत्ती	<i>Planchonella longipetiolatum</i> H. J. Lam., syn. <i>Sideroxylon longipetiolatum</i> King & Prain, fam. Sapotaceae
aam	आम	<i>Mangifera indica</i> Linn., fam. Anacardiaceae
(mango)		
nim-chameli	नीम-चमेली	<i>Millingtonia hortensis</i> Linn., f., fam. Bignoniaceae
kodapalai	कोडपलई	<i>Kingiodendron pinnatum</i> Roxb. Harms, syn.
choupaini	चौपैनी	<i>Hardwickia pinnata</i> Roxb., fam. Leguminosae
(piney)	(पिने)	
toon	तून	<i>Toona ciliata</i> Roem., syn. <i>Cedrela toona</i> Roxb., fam. Meliaceae

A P P E N D I X B

(Clause 9.1)

SAMPLING AND CRITERIA OF CONFORMITY OF BRUSHES, CLOTHES

B-1. The supplier shall submit three identical brushes for approval.

B-1.1 The indentor or inspection authority, as applicable, shall retain one of the three samples approved till the completion of the order.

B-2. PREPARATION OF TEST SAMPLES

B-2.0 Representative samples for test shall be selected at random in the manner indicated below.

B-2.1 All the brushes of the same design and manufacture shall be grouped together to constitute a lot.

B-2.1.1 The conformity of the brushes in a lot to the requirements of this specification shall be ascertained for each lot separately. The number of brushes to be drawn for this purpose shall be in accordance with col 1 and 2 of Table 1.

B-2.1.2 The brushes shall be drawn at random from the top, middle and bottom portion of the box. If brushes in a lot are packed in more than one box, approximately equal number of brushes shall be selected at random from as many boxes as possible so as to obtain the required number of brushes for tests, as given in Table 1.

B-3. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

B-3.1 All the brushes selected according to **B-2.1.1** and **B-2.1.2** shall be examined for constructional requirements given in 4. Any brush not

TABLE 1 SCALE OF SAMPLING AND PERMISSIBLE NUMBER OF DEFECTIVES
(Clause B-2.1.1)

NO. OF BRUSHES IN THE LOT	NO. OF BRUSHES TO BE SELECTED IN THE SAMPLE	PERMISSIBLE NO. OF DEFECTIVE BRUSHES IN THE SAMPLE	NO. OF BRUSHES IN THE SUB-SAMPLE
(1)	(2)	(3)	(4)
Up to 50	5	0	4
51 to 100	10	1	4
101 to 200	15	1	8
201 to 300	20	2	8
301 to 500	30	3	12
501 and above	40	3	16

conforming to any one or more of these requirements shall be considered as a defective.

B-3.1.1 The lot shall be declared as conforming to the requirements of 4 if the number of defective brushes is less than or equal to the number given in col 3 of Table 1.

B-3.2 In case the lot has been found satisfactory in **B-3.1.1**, a sub-sample of size given in col 4 of Table 1 shall be taken at random from the sampled brushes.

B-3.3 Half the brushes included in the sub-sample shall be taken and subjected to pull test and knock back test.

B-3.3.1 The lot shall be declared as conforming to the requirements of this test if none of the brushes tested fails the test.

B-3.4 The remaining half of the brushes included in the sub-sample shall be taken and the weight of the filling material determined.

B-3.4.1 The lot shall be declared as conforming to the requirements of this test if the weight of the filling material for each of the brushes lies within the specified tolerance.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	Kelvin	K
Luminous Intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>	<i>Conversion</i>
Force	newton	N	1 $\text{N} = 1 \text{ kg.l m/s}^2$
Energy	Joule	J	1 $\text{J} = 1 \text{ N.m}$
Power	watt	W	1 $\text{W} = 1 \text{ J/s}$
Flux	weber	Wb	1 $\text{Wb} = 1 \text{ V.s}$
Flux density	tesla	T	1 $\text{T} = 1 \text{ Wb/m}^2$
Frequency	hertz	Hz	1 $\text{Hz} = 1 \text{ c/s (s}^{-1}\text{)}$
Electric conductance	siemens	S	1 $\text{S} = 1 \text{ A/V}$
Pressure, stress	pascal	Pa	1 $\text{Pa} = 1 \text{ N/m}^2$

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